What is claimed is:

1. A transgenic conifer plant, wherein the conifer plant to be transformed is selected from the group consisting of the genus *Pinus* and *Pinus* interspecies hybrids, and wherein said transgenic conifer plant is produced by a process which comprises:

(a) placing conifer target tissue selected from the group consisting of embryogenic tissue containing pre-stage 3 somatic embryos, pre-stage 3 somatic embryos, pre-stage 3 zygotic embryos, and combinations thereof, on a target surface;

(b) bombarding the target tissue by physically accelerating at the target tissue carrier particles which are much smaller than the cells of the target tissue, the carrier particles carrying copies of a genetic construction including at least one gene of interest;

(c) inducing the bombarded target tissue to form proliferative tissue which is capable of forming somatic embryos;

(d) during the step of inducing, culturing the bombarded target tissue on selection medium so as to select for embryogenic tissue which is transformed by the gene of interest;

(e) inducing transformed somatic embryos to develop from the selected embryogenic tissue; and

(f) germinating and converting the transformed somatic embryos thus produced into clonal transgenic conifer plants.

2. The transgenic conifer plant of claim 1 wherein the conifer is selected from the group consisting of *Pinus taeda*, *Pinus serotina*, *Pinus palustris*, *Pinus elliottii*, *Pinus rigida*, *Pinus radiata*, and hybrids thereof.

3. The transgenic conifer plant of claim 1 wherein the carrier particles are microparticles between 0.2 and 2.0 microns in diameter.

4. The transgenic conifer plant of claim 1 wherein the selection medium contains a sufficient amount of organic and inorganic nutrients, a selection agent at a concentration which is toxic to non-transformed cells but for which the gene of interest confers resistance to transformed cells, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 30.0 mg/l of abscisic acid, up to about 60.0 g/l of sugar, and wherein the selection medium allows preferential growth of transformed cells containing the gene of interest..

5. The transgenic conifer plant of claim 4 wherein the selection medium contains a sufficient amount of organic and inorganic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 30.0 mg/l of abscisic acid, up to about 60.0 g/l of sugar, and wherein the selection medium lacks a component necessary for the growth of non-transformed cells but for which the gene of interest confers to transformed cells the ability to produce the lacking component.

6. The transgenic conifer plant of claim 4 wherein the selection medium contains a sufficient amount of organic and inorganic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 30.0 mg/l of abscisic acid, up to about 60.0 g/l of sugar, and wherein the selection medium contains a component necessary for the growth of cells in a form which cannot be utilized by non-transformed cells but for which the gene of interest confers to transformed cells the ability to utilize the necessary component.

7. The transgenic conifer plant of claim 4 wherein the selection medium contains a sufficient amount of organic and inorganic nutrients, a selection agent at a concentration which is toxic to non-transformed cells but for which the gene of interest confers resistance to transformed cells, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 30.0 mg/l of abscisic acid, and up to about 60.0 g/l of sugar.

8. The transgenic conifer plant of any one of claims 4, 5, 6, or 7 wherein the sugar is a member selected from the group consisting of glucose, maltose, sucrose, and combinations thereof.

9. The transgenic conifer plant of any one of claims 4, 5, 6, or 7 wherein the selection medium further contains a gelling agent selected from the group consisting of about 6.0 to about 9.0 g/l of agar, about 1.75 to about 4.0 g/l of gellan gum, about 6.0 to about 8.0 g/l of agarose, about 3.5 to about 5.0 g/l of AGARGEL, and combinations thereof.

10. The transgenic conifer plant of claim 1, wherein the process further comprises:

(a) culturing conifer target tissue selected from the group consisting of embryogenic tissue containing pre-stage 3 somatic embryos, pre-stage 3 somatic embryos, pre-stage 3 zygotic embryos, and combinations thereof, on preparation media containing a sufficient amount of inorganic and organic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 150.0 mg/l of abscisic acid, about 10.0 to about 120.0 g/l of sugar, and up to about 0.5M of organic alcohol, for a sufficient period of time to prepare the target tissue for bombardment by carrier particles;

(b) placing the prepared target tissue on a target surface;

(c) bombarding the prepared target tissue by physically accelerating at the prepared target tissue carrier particles which are much smaller than the cells of the target

tissue, the carrier particles carrying copies of a genetic construction including at least one gene of interest;

(d) inducing the bombarded target tissue to form proliferative tissue which is capable of forming somatic embryos;

(e) during the step of inducing, culturing the bombarded target tissue on selection media so as to select for embryogenic tissue which is transformed by the gene of interest;

(f) inducing transformed somatic embryos to develop from the selected embryogenic tissue; and

(g) germinating and converting the transformed somatic embryos thus produced into clonal transgenic conifer plants.

11. The transgenic conifer plant of claim 1, wherein the process further comprises

(a) placing conifer target tissue selected from the group consisting of embryogenic tissue containing pre-stage 3 somatic embryos, pre-stage 3 somatic embryos, pre-stage 3 zygotic embryos, and combinations thereof, on a target surface;

(b) bombarding the target tissue by physically accelerating at the target tissue carrier particles which are much smaller than the cells of the target tissue, the carrier particles carrying copies of a genetic construction including at least one gene of interest;

(c) culturing the bombarded target tissue on preparation medium containing a sufficient amount of inorganic and organic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 150.0 mg/l of abscisic acid, about 10.0 to about 120.0 g/l of sugar, and up to about 0.5M of organic alcohol, for a sufficient period of time to allow the bombarded target tissue to recover from carrier particle insertion;

(d) inducing the bombarded target tissue to form proliferative tissue which is capable

of forming somatic embryos;

(e) during the step of inducing, culturing the bombarded target tissue on selection media so as to select for embryogenic tissue which is transformed by the gene of interest;

(f) inducing transformed somatic embryos to develop from the selected embryogenic tissue; and

(g) germinating and converting the transformed somatic embryos thus produced into clonal transgenic conifer plants.

12. The transgenic conifer plant of claim 1, wherein the process further comprises:

(a) culturing conifer target tissue selected from the group consisting of embryogenic tissue containing pre-stage 3 somatic embryos, pre-stage 3 somatic embryos, pre-stage 3 zygotic embryos, and combinations thereof, on preparation media containing a sufficient amount of inorganic and organic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 150.0 mg/l of abscisic acid, about 10.0 to about 120.0 g/l of sugar, and up to about 0.5M of organic alcohol, for a sufficient period of time to prepare the target tissue for bombardment by carrier particles;

(b) placing the prepared target tissue on a target surface;

(c) bombarding the prepared target tissue by physically accelerating at the prepared target tissue carrier particles which are much smaller than the cells of the target tissue, the carrier particles carrying copies of a genetic construction including at least one gene of interest;

(d) culturing the bombarded target tissue on preparation medium containing a sufficient amount of inorganic and organic nutrients, up to about 5.0 mg/l of auxin, up to about 1.0 mg/l of cytokinin, up to about 150.0 mg/l of abscisic acid, about 10.0 to about 120.0 g/l of sugar, and up to about 0.5M of organic alcohol,

for a sufficient period of time to allow the bombarded target tissue to recover from carrier particle insertion;

(e) inducing the bombarded target tissue to form proliferative tissue which is capable of forming somatic embryos;

(f) during the step of inducing, culturing the bombarded target tissue on selection media so as to select for embryogenic tissue which is transformed by the gene of interest;

(g) inducing transformed somatic embryos to develop from the selected embryogenic tissue; and

(h) germinating and converting the transformed somatic embryos thus produced into clonal transgenic conifer plants.

13. The transgenic conifer plant of any one of claims 10, 11, or 12 wherein the sugar is a member selected from the group consisting of glucose, maltose, sucrose, and combinations thereof.

14. The transgenic conifer plant of any one of claims 10, 11, or 12 wherein the organic alcohol is a member selected from the group consisting of glycerol, mannitol, sorbitol, polyethylene glycol, and combinations thereof.

15. The transgenic conifer plant of any one of claims 10, 11, or 12 wherein the preparation medium further contains a gelling agent selected from the group consisting of about 6.0 to about 9.0 g/l of agar, about 1.75 to about 5.0 g/l of gellan gum, about 6.0 to about 8.0 g/l of agarose, about 3.5 to about 5.0 g/l of AGARGEL, and combinations thereof.

16. The transgenic conifer plant of claim 1 wherein the target tissue has been retrieved from cryopreservation .

17. The transgenic conifer plant of claim 1 wherein the bombarded target tissue is cryopreserved.

18. The transgenic conifer plant of claim 1 wherein the selected embryogenic tissue is cryopreserved.

19. The transgenic conifer plant of any one of claims 17 or 18 wherein the cryopreserved tissue is subsequently retrieved from cryopreservation.

20. The transformed embryogenic tissue of claim 1.

21. The transformed somatic embryos of claim 1.

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